DOCUMENT RESUME

ED 386 202 IR 055 617

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TITLE	Policy Initiatives and Strategies for Enhancing the Role of Public Libraries in the National Information Infrastructure (NII): Final Report.
INSTITUTION	Syracuse Univ., N.Y. School of Information Studies.
SPONS AGENCY	National Science Foundation, Arlington, VA.
PUB DATE	Sep 95
CONTRACT	NSF-RED-9454732
NOTE	63p.
PUB TYPE	Reports - Research/Technical (143)
EDRS PRICE	MF01/PC03 Plus Postage.
DESCRIPTORS	Administrative Policy; *Federal Legislation; *Government Role; *Information Networks; Library Policy; *Library Role; Library Services; *Public Libraries; Public Support; Responsibility; Telecommunications
IDENTIFIERS	Internet; *National Information Infrastructure

ABSTRACT

The purpose of this research was to explore the possible roles and responsibilities that public libraries might assume in the National Information Infrastructure (NII). Data was collected from September 1994 through June 1995, relying on the following data collection techniques: focus groups, personal interviews, survey data analysis, case studies, participant-provided document content analysis, and phone interviews. The existing Federal public library policy system is examined to determine the degree to which that policy system might have to be changed to accomplish the administration's policy objectives regarding public libraries in the NII, and policy recommendations are offered to revise and extend the existing public library policy system to promote proposed policy objectives related to a new role for public libraries in the NII. The policy review section examines current and future federal funding of public libraries and library management; Library Services and Technology Act; S. 652 (Telecommunications Competition and Deregulation Act of 1995); H.R. 1555 (The Communications Act of 1995); the Clinton Administration and telecommunications reform; and National Telecommunications and Information Administration Information Infrastructure grants. Research findings include the following areas: public library roles; public library connectivity; other barriers to establishing public library connectivity; impacts of public library connectivity; planning connectivity; and a new policy context. Findings indicate that all aspects of the public library connectivity environment are experiencing rapid changes. While public awareness of the NII grows, so does skepticism concerning the quality and benefits of government services. Public libraries must expect to face increasingly difficult times in competing for resources to maintain existing services while simultaneously introducing new Internet/NII-based services. It is illustrated that public libraries can make important contributions to achieving national economic and educational objectives, but to do so libraries must be willing to change in order to provide services most needed by their communities. The report examines several policy initiatives at the federal, state, and local government levels which were developed from the research findings. (Contains 24 references.) (MAS)

ED 386 202

POLICY INITIATIVES AND STRATEGIES FOR ENHANCING THE ROLE OF PUBLIC LIBRARIES IN THE NATIONAL INFORMATION INFRASTRUCTURE (NII):

FINAL REPORT

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Submitted for:

NSF Grant RED-9454732

September, 1995

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EXECUTIVE SUMMARY

The research project began in September, 1994 and was completed in June, 1995. The research team collected data throughout the project, relying on a variety of qualitative and quantitative data collection techniques. The purposes of this research is to better understand the possible roles and responsibilities that public libraries might assume in the NII. More specifically, the study had as its original objectives to:

- Develop models that describe alternative roles and responsibilities (especially as they relate to public education and literacy) that public libraries might assume in the NII.

- Assess the impacts of these models in terms of criteria such as (1) promotion of universal access to networked information, (2) costs, (3) training and personnel requirements, etc.

- Analyze the existing Federal public library policy system to determine the degree to which that policy system might have to be changed to accomplish the Administration's policy objectives regarding public libraries in the NII.

- Offer policy recommendations to revise and extend the existing public library policy system to promote proposed policy objectives related to a new role for public libraries in the NII.

These objectives were modified somewhat as the study progressed due to the changed Federal political environment resulting from the November, 1995 elections. Three written reports provide information on project activities, findings, and recommendations that address these objectives: (1) the *Final Report*, (2) the *Compendium to the Final Report*, and (3) *Internet Costs and Cost Models for Public Libraries*, published by the National Commission on Libraries and Information Science, June, 1995.

All aspects of the public library Internet connectivity environment are experiencing rapid changes. Communications and information processing technologies are rapidly evolving. New services, commercial and non-commercial, are being established daily. At the same time there is a growing skepticism concerning the quality and benefits of government services. All levels of government are facing significantly more austere funding environments. Public libraries must expect to face increasingly difficult times in competing for resources to maintain existing services while simultaneously introducing new Internet/NII-based services.

Public libraries can make important contributions to achieving national economic and educational objectives. But to do so, public libraries must be willing to change as well. Libraries need to determine which services will best meet the needs of their communities. Some reprioritization of existing resources should be expected. Public libraries (particularly those serving rural areas) need to be open to the possibility of collaboration with other libraries, public schools, colleges and other community service organization to achieve a critical mass of users required to afford Internet/NII services and to leverage their investments in technology and the acquisition of technical expertise to better meet the needs of their communities. Possible roles for public libraries to meet these challenges are described in this report.

The review of current public library-related policy documents indicates the existing Federal policy environment impacting on public library NII participation is volatile and fragmented. There appear to be only two constants in this environment -- change and budget reductions. It is difficult in such an environment, therefore, to uncover and define a federal role in support of public library NII initiatives. The study team also found minimal interest and support from Federal policymakers for new initiatives and programs related to libraries.

Despite this context, number of different types of policy initiatives can be proposed at the Federal state, and local levels. The study found that it is essential for initiatives to be considered and coordinated at all levels of government and with other key stakeholder groups. Additional initiatives for the library professional community, local public libraries, and vendors also should be considered and are detailed in Figure 2 of this report.

Internet Costs and Cost Models for Public Libraries identifies five representative connectivity models. Each model is detailed in terms of seven broad cost categories which contains detailed cost elements. These models and representative costs provide a range of examples for public libraries to plan for Internet connectivity and networked information services. Indeed, findings related to public library Internet costs suggest a very wide variation in possible connectivity models and services each of which affects the services that might be provided to a local community by its library.

If public libraries are to serve as a means to enhance public access to the Internet and the evolving NII, a coordinated effort to marshal resources and develop strategies from a number of key stakeholders will be necessary. Evidence presented in the various project reports suggests that a number of public libraries are successfully transitioning to the NII and a global networked information environment. Additional reliance on local and state policy initiatives, and individual library strategies, may be required by the library community until the Federal policy environment becomes better defined.

INTRODUCTION

Public libraries serve many roles in American society. They are learning centers, knowledge centers, information service providers, liaisons between citizens and their governments, community information centers, safety nets for the disadvantaged to retool their skills and knowledge, and they fulfill a host of other roles as well. But a single encompassing role for the public library is an information gateway where anyone in the public can obtain access to an increasingly large and complex collection of information resources and services.

This study assumes that public libraries, as an institution, are instrumental to the attainment of national policy objectives related to the NII, universal access to networked information and resources, and promoting network literacy. For the Nation to realize the social and economic benefits that could result from the NII, public libraries must play an important role in the diffusion of these new technologies and applications.

Public libraries support the diffusion by: (1) providing a range of useful information services (e.g., reference demand for local information); and (2) providing exposure to and assistance with these new technologies and services to members of the public. This should not be seen as "squeezing out" private sector services but rather as actively assisting in the development of the private markets for the NII by providing valuable services and educating potential customers.

The study products, findings, and policy initiatives intend to promote these roles for public libraries and to enhance public access to the Internet/NII via the Nation's libraries. As such, the proposed policy initiatives described later in this report are strategies intended to strengthen the role and effectiveness of public libraries.

Project Goals

In September, 1995, the National Science Foundation (NSF) funded a grant, *Policy Issues in Assessing the Role of Public Libraries in the NII*, proposed by the authors of this paper. The purposes of this research is to better understand the possible education roles and responsibilities that public libraries might assume in the NII. More specifically, the study had as its objectives to:

- Develop models that describe alternative roles and responsibilities (especially as they relate to public education and literacy) that public libraries might assume in the NII.

- Assess the impacts of these models in terms of criteria such as (1) promotion of universal access to networked information, (2) costs, (3) training and personnel requirements, etc.

- Analyze the existing Federal public library policy system to determine the degree to which that policy system might have to be changed to accomplish the Administration's policy objectives regarding public libraries in the NII.

- Offer policy recommendations to revise and extend the existing public library policy system to promote proposed policy objectives related to a new role for public libraries in the NII.

Policy research that addresses these objectives is essential if, in fact, the Administration's goals of having public libraries play a key role in the NII is to be realized. The methods section describes the various techniques employed by the study team to accomplish these objectives.

Background

In the State of the Union Address of January 25, 1994 President Clinton stated that "we must work with the private sector to connect every classroom, every clinic, every library [and] every hospital in America into the national information superhighway by the year 2000" (Clinton, 1994, p. 1). The Information Infrastructure Task Force (IITF) Committee on Applications and Technology noted in a January 25, 1994 policy document that libraries are one of seven major application areas for initial study, and that (1994a, p. 3):

> Providing equitable access is important for many of the applications areas considered. This issue includes access to other individuals and citizen groups via the NII as well as access to information.... For education and for libraries, all teachers and students in K-12 schools and all public libraries -- whether in urban suburban, or rural areas; whether in rich or in poor neighborhoods -- need access to the educational and library services carried on the NII. All commercial establishments and all workers must have equal access to the opportunities for electronic commerce and telecommuting provided by the NII. Finally, all citizens must have equal access to government services provided over the NII.

This policy position is a key component of the National Information Infrastructure (NII) initiative as outlined by the Information Infrastructure Task Force (1993).

Most recently, the IITF, Committee on Applications and Technology stated that one of the national visions for the NII was to "sustain the role of libraries as agents of democratic and equal access to information" (1994b, p. 1). How these roles evolve, how the private sector, state and local governments, the education community, and libraries can work together to realize these visions, and determining the Federal role in promoting these visions are critical concerns.

Indeed, the importance of public access to electronic information in a networked environment cannot be underestimated.

As another example, Vice President Gore visited the July 29, 1994 meeting of the National Commission on Libraries and Information Science (NCLIS) and stated (1994, p. 1-2), upon receiving the report *Public Libraries and the Internet: Study Results, Policy Issues, and Recommendations* (McClure, Bertot, and Zweizig, 1994):

> There must be a concerted effort to ask the questions and to inventory the challenges and to come up with the best answers [related to the information superhighway]. There is a whole collection of those questions that has to do with the role of libraries.... [NCLIS should] ask those questions, inventory those challenges and respond to the questions that involve libraries' roles in the information superhighway.

Connecting libraries to the NII, in and of itself, may not be the most difficult problem to address -- although it certainly will require careful thought and consideration. Equally important are issues of who will have what type of access to the NII, how to pay for the costs associated with using the network, educating the public on how to use the NII, and developing a range of applications and uses that promote network literacy and enhance our educational system.

While policy visions for promoting access to and use of the Internet via public libraries continue to evolve, there has been an ongoing, and serious, erosion of support for libraries to accomplish the government's existing policy goals in this area. There is a need for Federal government action to coordinate policy, programs, and research and development initiatives that support library-related efforts to enhance public access to the Internet.

The Final Report Compendium (hereafter referred to as the *Compendium*) provides an overview and analysis of the policy issues related to public libraries in the NII of the 103rd Congress. Later in this final report is an update on policy developments in the 104th Congress through June, 1995.

Study Team Research Efforts

During the past several years we have had a number of study teams at Syracuse University, School of Information Studies coordinating research that specifically investigated issues related to the role of libraries in the evolving Internet/NII. These studies include:

- Libraries and the Internet/NREN: Perspectives, Issues, and Challenges. (McClure, Moen, and Ryan, 1994). This book reports on studies related to how different types of libraries are using the Internet and identifies key factors that promote success in developing networked-based library

services. The research was funded, in part, by OCLC, Inc., and Mecklermedia Publishers.

- Connecting Rural Public Libraries to the Internet: The Project GAIN Report. (McClure, Babcock, Nelson, Polly, and Kankus, 1994). This study, reports the results of connecting rural public libraries to the Internet and identifies impacts that resulted from having these connections. The research was funded, in part, by NYSERNet, the Kaplan Foundation, and Apple Computer Corporation.

- Network Literacy in an Electronic Society: An Educational Disconnect? (McClure, 1993). This report identifies factors that contribute to a growing class of disenfranchised citizens who increasingly are unable to take advantage of networked information resources and services.

- Public Libraries and the Internet: Study Results, Policy Issues, and Recommendations. (McClure, Bertot, and Zweizig, 1994). This report offers the first national survey data describing public libraries' use and connectivity with the Internet. The National Commission on Libraries and Information Science (NCLIS) funded this study.

- Internet Costs and Costing Models for Public Libraries. (McClure, Bertot, and Beachboard, 1995). Described in this report are a number of models for obtaining Internet connectivity with corresponding costs detailed in various cost categories. NCLIS and the NSF funded this study.

Findings from these studies informed the research completed for the NSF, *Policy Initiatives and Strategies for Enhancing the Role of Public Libraries in The National Information Infrastructure (NII)* reported here. Readers wishing to review additional material and background material on the topic of public libraries and the Internet/NII should examine the material in the above sources.

Study Method

The research project began in September, 1994 and was completed in June, 1995. The research team collected data throughout the project, relying on a variety of qualitative and quantitative data collection techniques to achieve the following research objectives:

- Develop models that describe alternative roles and responsibilities (especially as they relate to public education and literacy) that public libraries might assume in the Internet/NII.

- Assess the impact of these models in terms of criteria such as the promotion of universal access to networked information, costs, training and personnel requirements.

- Analyze the existing federal public library policy system to determine the degree to which that policy system might require modification to accomplish the Clinton Administration's stated policy objectives regarding public libraries and the Internet/NII.

- Offer policy recommendations to revise and extend the existing public library policy system to promote proposed policy objectives related to a role for public libraries in the Internet/NII.

In achieving these research objectives, the researchers sought to increase policy maker, stakeholder group, researcher, and practitioner knowledge of as well as inform the policy debate concerning public library roles in the Internet/NII.

Research Approach and Data Collection

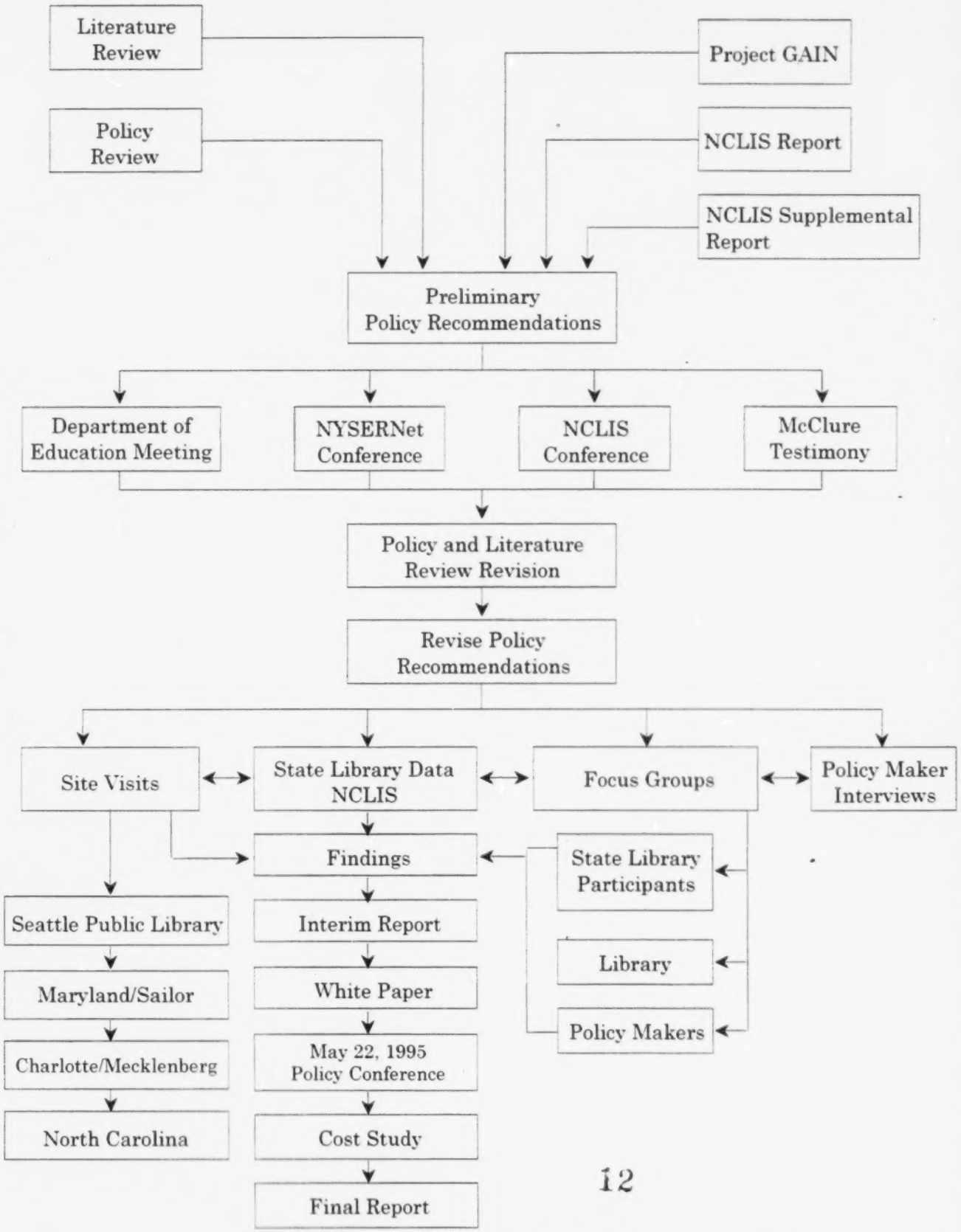
The study team used multiple data collection techniques with policy makers and stakeholder group members in the federal government (e.g., administration and Congressional personnel), state government (e.g., state librarians), library profession (e.g., public librarians, various national library organizations), and information and information technology industry (e.g., on-line public access catalog and on-line information services vendors). These data collection techniques included (see Figure 1):

- Focus groups
- Personal interviews
- Survey data analysis
- Case studies
- Participant-provided document content analysis
- Phone interviews.

To design the research and complete the data collection activities, the research team used standard techniques as outlined by Marshall and Rossman (1995), Creswell (1994), Krueger (1994), Miles and Huberman (1994), and Fowler (1993). Such techniques incorporated strategies to ensure the collection of reliable and valid data, the specific details of which are incorporated into each individual data collection activity included in the *Compendium* submitted in June, 1995.

Initially, the study team performed an extensive literature and federal policy review pertaining to the research topic, reviewed findings from relevant empirical studies, and conducted preliminary interviews with knowledgeable individuals in the field. Such data collection activities permitted the research team to identify key

Figure 1. Final Report Methodology



issues and develop an initial set of policy recommendations pertaining to the role of public libraries in the Internet/NII. These preliminary policy recommendations were incorporated into conference presentations, policy maker meetings, and other research-related activities. Based on participant feedback, the study team revised the initial set of policy recommendations and key issues to assist with additional data collection activities.

Policy maker, stakeholder, and practitioner participant feedback also strongly indicated the need for public library Internet/NII connectivity cost estimates and cost estimates associated with types of public library Internet/NII connectivity models. Based on participant requests and the felt need of the study team, the researchers sought to incorporate a separate report to assist public libraries plan and develop Internet/NII connectivity programs and provide Internet/NII-based services into the policy initiatives study underway. As such, the research team, with additional research assistance provided by the National Commission on Libraries and Information Science (NCLIS), merged the data collection activities to provide data for both policy initiative and Internet/NII connectivity cost model development. As discussed in the Dissemination Strategies section of this report, NCLIS published the cost report, entitled *Internet Costs and Cost Models for Public Libraries*, in June, 1995 through the Government Printing Office (GPO).

As Figure 1 indicates, there were four groupings to the study's primary data collection activities within which additional research activities (e.g., surveys) occurred (described in detail in the *Compendium*):

- Site visits
- Collection of state library data
- Focus groups
- Policy maker/public library interviews.

In all, the study team:

- Conducted four site visits that included individual and group interviews, the collection of project documentation, follow-up phone interviews, and Internet connectivity and service cost data collection with,
  - a large urban public library network initiative
  - a large city/county public library system network initiative
  - two state library-based network initiative
  - four urban and rural libraries in one of the states in which a site visit occurred.

- Surveyed five state librarians concerning the details of their state's networking programs and reviewed other state networking initiatives.

- Conducted four focus groups comprised of federal, state, and local policy makers, stakeholder groups, researchers, practitioners, and other experts. Three of the focus groups occurred during the 1995 Midwinter American Library Association annual conference, and one occurred in central New York during December, 1994.

- Conducted in-depth in-person and phone interviews with five individuals involved in the federal policy-making process, as well as with representatives from a rural consortium of small public libraries and a medium size urban public library.

The combination of these data collection techniques allowed the study team to compare and contrast the information obtained. In addition, the various data collection activities informed additional data collection activities, allowing the researchers to further develop, test, and revise the policy initiatives.

The study team members revised data collection instruments for each data collection activity based on newly acquired information from previous data collection techniques. Thus, the items were continually revised and improved during the research project, allowing for an evolving data collection process that incorporated new knowledge and information as the study progressed.

A key component of the policy analysis was the May 22, 1995 Conference organized by the study team. Based on the data collection activities detailed above, the researchers developed a discussion paper, *Policy Initiatives and Strategies for Enhancing the Role of Public Libraries in the National Information Infrastructure (NII)*, that detailed policy initiatives at the federal, state, and local government levels, as well as policy initiatives for library professional associations, local public libraries, and vendors, to enhance public library roles in the NII.

The study team used the discussion paper to promote a discussion and debate among invited federal, state, and local government policy makers, state librarians, researchers, and public librarians at this May 22 Conference. Overall, the Conference participants discussed public library involvement with the NII (a list of participants is available in the*Compendium*), and the discussion paper is available electronically via the World-Wide Web -- individuals should point their Web browser to:

http://dataserver.syr.edu/~macbeth/Project/Faculty/McClure.html

In particular, the policy conference assisted the researchers in:

- Assessing the potential for the proposed policies and strategies to enhance the role of public libraries in the evolving Internet/NII.

- Discussing and analyzing the processes by which these policies and strategies could be best implemented.

- Identifying responsibilities and cost implications for these various policies and strategies.

The policy conference provided the researchers with important feedback and additional ideas, enabling the researchers to develop a final set of proposals related to federal, state, and local policies regarding public libraries' role in the Internet/NII as well as other strategies to enhance the role of public libraries in the Internet/NII.

Study Participants

The study team established the following criteria for identifying appropriate individuals, public libraries, state libraries, and information providers for data collection:

- The national publicity generated by the networking initiatives, with particular interest in the initiatives' integration of rural and urban patron needs

- The information available on the Internet through electronic discussion lists describing the networking initiatives

- Study team knowledge of the network initiatives

- Preliminary discussions and interviews with various networking initiative administrators, staff, and project managers indicating that such projects and project participants might be appropriate for the purpose of this study

- Knowledge of potential participants concerning networking initiatives in general, the existing federal policy framework concerning networking, and networking activities occurring at the state and local levels
- The ability and willingness of potential participants to participate in the study, assist in scheduling meetings, and meet with the study team.

Based on these criteria, the study team approached potential study participants through e-mail, letters, and phone calls requesting their participation in the study. Depending on the level of commitment participants were willing to provide the study, participants were asked to participate in one or more of the data collection activities as outlined above (e.g., phone interview, survey, site visit).

Data Analysis

A study team member drafted a written analysis of each data collection activity. Members of the study team reviewed each draft. Research team members returned comments on the reviewed draft, after which the responsible study team member revised and redistributed the written analysis to study team members. In some cases, the study team forwarded copies of final drafts to data collection activity participants for review and comment. The study team member organized the data collection's findings in terms of:

- Key issues affecting public library participation in the evolving NII
- Identified policy initiatives at the federal, state, or local government level that promoted or hindered public library involvement with the NII
- Lessons learned from the identified key issues and policy initiatives that could inform the policy recommendation development process
- Avenues of data collection to pursue in future data collection activities.

The written analyses were then finalized and collected as appendices in the *Compendium*.

Summary of Method

The methodology used for this study relied on a combination of data collection activities, meetings with numerous policy makers, stakeholder groups, researchers, and public librarians, and an evolutionary approach to instrument design and administration (for specific details on individual data collection activities, refer to the*Compendium*). Findings from one data collection activity informed the subsequent data collection activities. Additionally, the study team deployed a number of opportunities to obtain feedback and ongoing assessment of policy initiatives and key issues.

Changing Nature of the Study

The policy context when the study proposal was written and funded changed dramatically in November, 1994 -- two months into the project. In the national elections of 1994, the American voters elected Republican majorities for both the House of Representatives and the Senate. The Republicans' "Contract with America," became the key agenda for Congressional activity -- especially in the House.

Thus, the 104th Congress, that began in January 1995, offered a political philosophy much different than that of the 103rd Congress. The summary of policy

issues and the study team's analysis of the 103rd Congress is in the *Compendium*. A later section provides a brief update and analysis of issues related to public libraries and the NII for the 104th Congress current through June, 1995.

When the original study had been proposed to the NSF in May of 1994, the underlying assumptions of the study were that there was a key Federal policy role in promoting public access to the Internet/NII via the nation's libraries, in general, and through public libraries in particular. Numerous policy statements to that affect had been made by members of the Clinton administration and the 103rd Congress. Thus, the emphasis of the study was on Federal policy initiatives and strategies.

As the views of the new Congress and changes within the Clinton administration became evident, a significant change in the role of the Federal government became clear. Policies would be driven by the following considerations:

- The size and cost of the Federal government will be significantly reduced; a number of agencies will be eliminated or combined with other agencies.
- The Federal government will push program responsibilities to the state and local levels.
- Federal program spending and responsibilities for a range of entitlements and social programs will be significantly reduced.
- The library community will need to take on more direct responsibility for being successfully involved in the Internet/NII rather than looking for "handouts" from the Federal government.
- New alliances and collaborations that include the library community would be needed to be successful in the networked environment.

Given these considerations, the study team re-directed the emphasis of the study from concentrating on Federal policy initiatives to developing a range of initiatives that would be of use to other stakeholders in addition to Federal policy makers.

This rationale contributed to the study team's perspective of proposing strategies which might assist the public library community, directly, enhance public access to the Internet/NII. Early in the study, participants told study team members that there was inadequate information available about how public libraries could connect to the Internet and the costs for such connections. Given the goals of the study and the changing Federal policy context the study team decided to produce a manual that would help public libraries better plan for and connect to the Internet.

Thus, in collaboration with and receipt of additional funding support from NCLIS, the study team produced the report *Internet Costs and Cost Models for Public Libraries*. This report has been published by the Government Printing Office and is distributed by NCLIS. In essence, the study team believed that a strategy with greater potential benefit than affecting Federal policy (given the current policy context), was to assist public libraries better provide public access to the Internet and evolving NII through the publication of this manual.

Thus, the study produced initiatives and products for audiences broader than the Federal policy making environment. Although this approach was not anticipated when the project was proposed to NSF, we believe that greater benefits will result from the study by producing the *Internet Costs and Cost Models for Public Libraries* and having taken on a broader view in the final report for proposed policy initiatives and strategies.

POLICY REVIEW

This section updates the policy review section contained within the *Compendium* submitted in June, 1995. This review is selective and focuses on current policy initiatives that directly impact on the role of public libraries in the emerging national information infrastructure (NII).

This section reflects a volatile and dynamic policy environment. The current federal policy environment is one in which there is a desire by Congressional and Administration policy makers to affect dramatic change in all policy areas, particularly those of telecommunications and education. It remains unclear as to how the Clinton administration will react to Congressional initiatives that in general generate consumer protection and benefit through market forces and competition while largely relying on state-run federal block grants to manage various educational programs. This environment is also one of competing philosophies and political approaches to policy issues both within Congress and between Congress and the Administration. The 1994 election gave the Republicans control of the Congress, providing the Republicans with the ability to control legislative action for the first time in over 40 years. Rather than create a two-way policy debate between the Congress and the Clinton Administration, however, there is in fact a three-way debate over policy issues between the House, the Senate, and the Administration. This debate is generally characterized by a fast-moving House in favor of shifting the federal government's involvement in numerous social programs such as education to the states through block grants, a methodical Senate that is both reacting to and modifying House initiatives, and a Clinton Administration that is essentially waiting for legislation from Congress rather than proposing initiatives on its own.

It remains unclear as to how the policy debate will progress under current circumstances. There is no clear indication of the ability and/or willingness of the

House to work with the Senate and the Congress to work with the Administration to enact legislation. The education and telecommunications policy areas, however, can have a major impact on the public library community. This section highlights key policy initiatives that affect the public library community's efforts to transition to and participate in the electronic networked environment.

Current and Future Federal Funding of Public Libraries and Library Management

Federal funding of libraries, particularly public libraries, is generally small in dollar amounts but significant in the effect it can have on the ability of public libraries to leverage local community resources to match federal funding (McClure, Bertot, and Zweizig, 1994). The most significant of federal programs that funds public libraries is the Library Services and Construction Act (LSCA) (20 USC 16), a state-based matching fund program.

LSCA is a multi-titled program that provides federal funding for public library construction, information services, and education needs. Particularly relevant to public library NII initiatives are Titles I-III, Public Library Services, Public Library Construction and Technology Enhancement, and Interlibrary Cooperation and Resource Sharing, respectively. For FY1996, the Clinton Administration recommended a total of $106,927,000 in funding for LSCA, $89,135,000 for Public Library Services (Title I) and $17,792,000 for Public Library Construction and Technology Enhancement (Title II). The House, however, in the recently passed education appropriations bill H.R. 2127, provides a total of $101,227,000 in funding for LSCA Public Library Services (Title I) and Interlibrary Cooperation and Resource Sharing (Title III), while leaving Public Library Construction and Technology Enhancement (Title II) unfunded. Both the Clinton Administration's and House's funding proposals for LSCA represent an over 30% cut in funding from FY1995, with the essential elimination of several LSCA titles due to a lack of funding. It remains unclear as to what action the Senate will take on LSCA funding.

The debate over LSCA funding in an electronic networked environment, moreover, is perhaps a debate that should not occur. LSCA is the only specific federal source of public library funding. LSCA is, however, inadequate in its ability to assist public libraries participate in the NII due to its non-competitive funding allocation, distribution of funds through state library agencies, and historical provision of construction funding (McClure, Bertot, and Zweizig, 1994). It is, therefore, essential that LSCA undergo a transformation that specifically provides for public library-based electronic network initiatives. In part, the American Library Association (ALA)-sponsored Library Services and Technology Act (LSTA) discussed in the next section is one such effort.

In addition to direct cuts in federal funding of public libraries, federal management of library advisement and management is diminishing. The National Commission on Libraries and Information Science (NCLIS) exists primarily to

inform and advise the federal government on policy initiatives and general matters concerning libraries within the United States. NCLIS is a small agency, with funding of just over $900,000 in FY1995. The current budget proposals seek to cut NCLIS' budget to $450,000 for FY1996, apparently signalling the elimination of the Commission. Also, the Department of Education, which oversees several library related programs such as the Higher Education Act, the Goals 2000: Educate America Act, and LSCA, will take significant cuts in program allocations or lose a variety of programs to federal block grants to states should the House appropriations in H.R. 2127 hold. The management and execution of such programs, and their impact on public libraries, remains unclear.

Such intended cuts in federal public library funding and management entities indicate that there is a decreasing federal role in support of public libraries in general and the public library transition to the networked environment in particular.

Library Services and Technology Act

The American Library Association (ALA), in conjunction with other state library and library professional groups, drafted the Library Services and Technology Act (LSTA) as a successor to LSCA with the intent of modernizing federal public library support. The ALA lobbied both the House and the Senate to introduce and enact the drafted legislation. The House made numerous revisions to the ALA-proposed LSTA while the Senate essentially adopted the ALA-proposed LSTA. Both houses, however, adopted substantially different versions of LSTA in terms of program management, administration, and oversight.

The House - H.R. 1617

The House incorporated elements of ALA's proposed LSTA legislation as part of the Consolidated and Reformed Education, Employment, and Rehabilitation Systems Act, H.R. 1617. The bill replaces over 100 programs with several block grants for job training, adult education, vocational rehabilitation, and similar purposes. H.R. 1617 keeps library program oversight, administration, and management within the Department of Education.

The House version of LSTA has as its main goals to (Sec. 441(1-3)):

- Consolidate federal library service programs
- Improve public access to information through electronic networks
- Improve linkages among and between libraries and one-stop career center systems.

The House version of LSTA, therefore, views libraries as both public access points to networked electronic information and life-long learning career centers.

To accomplish these goals, H.R. 1617 allocated each state a minimum of $200,000 per year. The bill allocates additional monies of $110 million for each of the fiscal years 1997-2002 based on the ratio of a state's population to the overall population of the country for library-related grants. Furthermore, the bill mandates a 25% match by state or local governments. The bill requires that each state library agency receive all the funds allocated to a state, with a total of 3% of funds applied towards "planning, administration, and interagency coordination," (Sec. 445(b)) and 97% of funds applied towards (Sec. 445(a)(1-6):

- Electronically connecting libraries with one-stop career center systems
- Establishing or enhancing linkages among libraries
- Assisting libraries in accessing information through electronic networks
- Encouraging libraries in different federal, state, and local jurisdictions, and different types of libraries, to establish consortia and share resources
- Paying costs for libraries to acquire and share computer systems and telecommunications technologies
- Improving library and information services for individuals who have difficulty using a library or who need special library materials, including individuals under the age of 18.

Clearly, members of the House view electronic networks and patron access to and use of such networks through libraries as critical to the future productivity, life-long learning, and education. Furthermore, based on allocation mandates, the House intends for federal funds to go towards the provision of services rather than the administration of such services by the state library agency.

Noticeably absent in the funding allocations is funding for program evaluation. LSTA does require each state applying for LSTA grants to "describe the methodology that such agency shall use to evaluate the success of such activities in achieving such goals and meeting such priorities," (Sec. 446(a)(3) but does not permit the use of federal funds for such evaluations.

The Senate - S. 856

The Senate version of LSTA, incorporated into the Arts, Humanities, and Museums Amendments of 1995 (S. 856), deviates substantially from the House LSTA version. Indeed, the Senate removes library program administration and

oversight from the Department of Education, establishing the Institute of Museum and Library Services within the National Foundation on the Arts and the Humanities. Within the Institute, the bill establishes the Office of Library Services for federal library program management.

According to the Senate, the purpose of the LSTA is to (Sec. 202(a)(1-3):

- Stimulate excellence and promote equity and lifelong access to learning and information resources in all types of libraries
- Combine the ability of the federal government to stimulate significant improvement and innovation in library services with support at state and local levels, and with cooperative programs with other agencies and with public and private sector partnerships, to achieve national library service goals
- Establish national library service goals for the 21st century. Such goals are that every person in America will be served by a library that--
  - provides all users access to information through regional, state, national, and international electronic networks
  - contributes to a productive workforce, and to economic development, by providing resources and services designed to meet local community needs
  - provides a full range of resources and programs to develop reading and critical thinking skills for children and adults
  - provides targeted services to people of diverse geographic, cultural, and socioeconomic backgrounds, to individuals with disabilities, and to people with limited functional literacy or information skills
  - provides adequate hours of operation, facilities, staff, collections, and electronic access to information.

The Senate version of LSTA, while providing for and recognizing the importance of electronic networks, emphasizes literacy, life-long learning, and the educational role of libraries in society.

The Senate LSTA essentially provides for two main grant categories:

- **Information Access through Technology grants**, that "provide for the improvement of library services so that all people have access to information delivered by libraries through new and emerging

technologies, whether the information originates locally, from the State, nationally, or globally" (Sec. 231(a)).
Recipients of these grants can use the grant funds to "provide statewide services and subgrants to public libraries, other types of libraries and library consortia, or library linkages with other entities" (Sect. 232). The Senate emphasizes the use of such grants for the organization, access, and delivery of information, life-long learning activities that include workforce and economic development, and technology infrastructure support.

- **Information Empowerment through Special Services grants**, that "provide for the improvement of library and information services targeted to persons of all ages and cultures who have difficulty using a library and to communities which are geographically disadvantaged in access to libraries, who or which need special materials or services, or who or which will benefit from outreach services for equity of access to library services and information technologies..." (Sec. 241(a).

  Recipients of these grants can use the grant funds to "provide statewide services and subgrants to public libraries, other types of libraries and library consortia, or library linkages with other entities...that increase literacy and lifelong learning, serve persons in rural, underserved or inner-city areas, or support the provision of special services" (Sec. 242).

For each of these types of grants, the Senate allocates $75 million for FY 1996 and "necessary funds" for the subsequent four fiscal years. Out of these funds, similar to the House version of LSTA, each state automatically receives an allocation of $200,000, with additional funds based on the proportion of a state's population in relation to the population of the nation. Also, as with the House LSTA version, these are matching funds. The Senate, however, requires a 50% match rather than the 25% match in the House.

Out of the allocated funds, the state library agency can use no more than 5% for both administration and evaluation. Unlike the House LSTA, the Senate requires a large evaluation component to the grant programs. States need to demonstrate the effectiveness of the grants in ensuring that every (Sec. 251(b)(1-5):

- American will have affordable access to information resources through electronic networks
- Public library will be connected to national and international electronic networks
- State library agency will promote planning and provide support for full library participation in electronic networks

- Public librarian will possess the knowledge and skills needed to help people obtain information through electronic sources

- Public library will be equipped with the technology needed to help people obtain information in an effective and timely manner.

To evaluate the attainment of these goals, the bill requires each state to establish performance measures and benchmarks against which to measure state progress.

Within the Senate LSTA, among other set-asides, there is an 8% set-aside of allocated funds for the National Leadership Program (NLP). This program has as its primary goal the education of library professionals in new technologies. In particular, the NLP funds are for (Sec. 262(a)(1-3)):

- Education and training of persons in library and information science, particularly in areas of new technology and other critical needs, including graduate fellowships, traineeships, institutes, or other programs

- Research and demonstration projects related to the improvement of libraries, education in library and information science, enhancement of library services through effective and efficient use of new technologies, and dissemination of information derived from such projects

- Preservation or digitization of library materials and resources, giving priority to projects emphasizing coordination, avoidance of duplication, and access by researchers beyond the institution or library entity undertaking the project.

The Senate LSTA, therefore, specifically targets librarian and information science professional training, library development, and special collections development projects that assist libraries make the transition to the networked environment.

Of final interest in the Senate LSTA is the establishment of state advisory councils. The Senate LSTA requires each state to establish an advisory council to assist in the development of state plans (required for states wanting to receive grants under this program), the advisement of state library administration policies, and the creation of evaluation mechanisms. Furthermore, the bill requires a broadly composed council, with representatives from "the library entities in the State, including public, school, academic, special, and institutional libraries, and libraries serving individuals with disabilities" (Sec. 252(b)).

The prospect of passage for either H.R. 1617 or S. 852 remains unclear. This is particularly true of S. 852, which relies on the National Endowment for the Arts and Humanities (NEAH) as the managing entity of federal library programs. The continued existence of the NEAH is suspect, as Congress voted to phase-out funding

for the NEAH beginning in FY 1996 and rescinded $10,000,000 from the NEAH's FY 1995 funding (P.L. 104-19, 109 STAT. 211). Additionally, the House bill is at odds with the reorganization, downsizing, and block grant approach the House is taking with the Department of Education. The future of LSTA, therefore, is not promising.

Telecommunications Reform in the 104th Congress

The House and Senate each proposed and passed, within their respective houses, substantial telecommunications reform bills. The bills, S. 652 in the Senate and H.R. 1555 in the House, approach telecommunications reform differently in the specific details but both essentially legislate a national telecommunications environment in which free markets and competition foster an integrated, affordable, and functional national information infrastructure. The bills considerably overhaul the Communications Act of 1934 and the Modification of Final Judgement to essentially open all telecommunications markets, with some safeguards, to competing entities. For example, upon meeting certain criteria, regional bell operating companies (RBOCs) can provide long distance services while long distance carriers can provide local telephone services.

Presented below are highlights of the Senate and House telecommunications reform bills that directly affect a public library's telecommunications services through such key issues as universal service, rural markets, and access to affordable telecommunications services. This section, therefore, is selective and does not present an analysis of the bills in their entirety. Finally, it is likely that telecommunications reform legislation will evolve yet again as the houses debate each other's bills.

The Senate - S. 652, Telecommunications Competition and Deregulation Act of 1995

The Senate views telecommunications reform as a means to provide for "an orderly transition from regulated markets to competitive and deregulated telecommunications markets consistent with the public interest, convenience, and necessity" (Sec. 3). By opening the telecommunications markets, the Senate intends to achieve several goals, key among which are to (Sec. 4):

- Promote and encourage advanced telecommunications networks, capable of enabling users to originate and receive affordable, high-quality voice, data, image, graphic, and video telecommunications services
- Spur economic growth, create jobs, and increase productivity
- Deliver a better quality of life through the preservation and advancement of universal service to allow the more efficient delivery of educational, health care, and other social services.

In setting these goals, the Senate attempts to create a regulatory environment that promotes universal service with a particular emphasis on rural markets, fosters NII technical and content development through permitting cross-market fertilization of the cable, local telephone, and long distance industries, and creates a federal-state cooperative regulatory environment that is less extensive than the current regulatory environment while simultaneously providing incentives to telecommunications providers to connect such public institutions as schools and libraries. In general, the bill requires cable companies, RBOCs, and long distance carriers to provide telecommunications services in new markets through partnerships, affiliates, or independent subsidiaries. Ostensibly, such requirements intend to reduce the creation of telecommunications monopolies like those that currently exist in the local telephone service and cable industries.

Universal Service

A key notion in telecommunications reform is that of universal service. In general, universal service is a concept derived from the telephone industry and entails the provision of dial tone -- not necessarily services -- to all areas. Extending this notion to the NII essentially means that advanced telecommunications technologies -- the wires, cables, etc. -- should be available throughout the nation on an equitable basis. Universal access, on the other hand, is similar to the cable industry and is based on the notion that market forces and consumer demand determine the availability of service and content. In an advanced telecommunications environment this model implies that telecommunications carriers will provide telecommunications services in markets where there is a demand and reasonable expectation of profit.

The Senate combines the concepts of universal service and access in its definition and principles of universal service. The Senate does not clearly define universal service, preferring to defer the definition process to a joint federal-state board. The Senate, however, does specify that the board should ensure that telecommunications technologies and services (Sec. 253(b)(1)(A-C)):

- Should be provided at just, reasonable, and affordable rates to all Americans, including those in rural and high cost areas and those with disabilities
- Are essential in order for Americans to participate effectively in the economic, academic, medical, and democratic processes of the Nation
- Are, through the operation of market choices, subscribed to by a substantial majority of residential customers.

Moreover, the Senate, in realizing that universal service is an evolving concept, provides the joint board with the flexibility to develop different universal definitions for schools, health care providers, and libraries (Sec. 253(b)(2)).

The Senate bill includes a list of principles to guide the development of these telecommunications services and evolving definitions of universal service. These principles include (Sec 253(a)(1-7)):

- Quality services are to be provided at just, reasonable, and affordable rates
- Access to advanced telecommunications and information services should be provided in all regions of the Nation
- Elementary and secondary schools and classrooms should have access to advanced telecommunications services.

Based on the guiding principles and existing definition of universal service, it is clear that the Senate considers it critical for the nation's educational and economic growth that all citizens have access to adequate and affordable telecommunications technologies and services regardless of location. Notably absent from the Senate's mention of communities to specifically have access to and provide such services is the library community.

Rural and High Cost Communities

The Senate uses a combination of market forces, incentives, and mandates to provide telecommunications services to rural and high cost markets. Essentially, the Senate takes an escalating involvement approach to rural and high cost markets, preferring market forces to facilitate telecommunications services, followed by incentives and mandates.

Should there not be a telecommunications carrier willing to provide services to a rural or high cost market, the Senate permits the Federal Communications Commission (FCC), in conjunction with state public service/utility commissions, to take a variety of action. Although not well defined, the bill provides for "Universal Service Support," (Sec. 253(e)) a feature that permits the FCC to modify its existing rules to do "what is necessary to preserve and advance universal service" (Sec. 253(e)). These modifications are to "ensure that essential telecommunications carriers are able to provide universal service at just, reasonable, and affordable rates. A carrier that receives universal service support shall use the support only for the provision, maintenance, and upgrading of facilities for which such support is intended" (Sec. 253(f)). It is unclear as to what composes such universal service support.

A final course of action that the FCC can take in conjunction with public service/utility commissions is to designate a telecommunications carrier, or several carriers if an area is serviced by more than one carrier, as an "essential telecommunications carrier" (Sec. 104). Such a designation requires a telecommunications carrier to provide telecommunications services to a particular area.

Interestingly, and somewhat contradictory, is a provision in the bill that permits a telecommunications carrier to exclude an area from service so long as the carrier can demonstrate that (Sec. 253A(a)(1-2)):

- There will be insufficient consumer demand for the carrier to earn some return over the long term on the capital invested to provide such service to such area

- Providing a service to such area will be less profitable for the carrier than providing the service in areas to which the carrier is already providing or has proposed to provide the service.

The bill is not clear as to the relationship between the essential telecommunications provider and exclusionary provisions. This is a particularly critical point, as it appears that the criteria for a telecommunications carrier to exclude a region from service are relatively easy to satisfy.

Support for the Education and Public Library Communities

One of the more interesting proposals contained within S. 652 is the recognition of the Washington, D.C.-based nonprofit National Education Technology Funding Corporation (NETFC). Such recognition entitles the NETFC to receive assistance from federal agencies and departments. The NETFC exists to (Sec. 602(3)(A-F):

- Leverage resources and stimulate private investment in education technology infrastructure

- Designate state education technology agencies to receive loans, grants, or other forms of assistance from the [NETFC]

- Establish criteria for encouraging states to,

  - Create, maintain, utilize, and upgrade interactive high capacity networks capable of providing audio, visual, and data communications for elementary schools, secondary schools, and public libraries

- Distribute resources to assure equitable aid to all elementary schools and secondary schools in the state and achieve universal access to network technology

- Upgrade the delivery and development of learning through innovative technology-based instructional tools and applications

- Provide loans, grants, and other forms of assistance to state education technology agencies, with due regard for providing a fair balance among types of school districts and public libraries assisted and the disparate needs of such districts and libraries

- Leverage resources to provide maximum aid to elementary schools, secondary schools, and public libraries

- Encourage the development of education telecommunications and information technologies through public-private ventures, by serving as a clearinghouse for information on new education technologies, and by providing technical assistance, including assistance to the states, if needed, to establish state education technology agencies.

The significance of the bill's recognition of the NETFC is that public library funding for NII initiatives and participation is essentially in the hands of the NETFC. Although there is mention of the importance of public library functions in the evolving NII, the bill essentially provides no direct federal support, either in fact or in principle, to public libraries.

Obscenity and the NII

There is a provision in the Senate bill that could affect the use of the NII by public libraries concerning the appropriate use of public network facilities. In particular, S. 652 seeks to fine and/or imprison any individual and/or telecommunications or information provider that knowingly transmits "any comment, request, suggestion, proposal, image, or other communication which is obscene, lewd, lascivious, filthy, or indecent, with the intent to annoy, abuse, threaten, or harass another person" (Sec. 402(a)(1)(A)(ii).

Such a broad and sweeping provision, in which there are no guidelines against which to measure such inappropriate network use, essentially puts organizations such as the public library in the position of network use monitors. This provision is impractical at best and a potential violation of the First Amendment at worst.

Summary

The Senate bill represents a sweeping overhaul to the existing telecommunications environment of this country. The bill focuses on the reduction of regulations, the introduction of competition into the long distance, local telephone service, and cable markets, and the equitable distribution of telecommunications technologies and services through competition.

In addition, it is clear that the Senate considers it the responsibility of communities, states, and other organizations, through collaboration, to connect public institutions such as public libraries to the NII. In telecommunications terminology, the Senate bill provides the "pipe," not the content or equipment required at either end of the "pipe." What effect this will have on the ability of public libraries to make the transition to the NII is not clear.

H.R. 1555 - The Communications Act of 1995

The House, while forming legislation on essentially the same issues as the Senate -- universal service, market-forces in lieu of regulation, and a relatively open telecommunications industry -- differs in its approach to telecommunications reform. Key differences include the ability of long distance carriers, RBOCs, and cable companies to compete in each other's markets. While permitting such competition through similar mechanisms as the Senate bill, such as affiliates and subsidiaries, there are substantial differences in the criteria for and timing of market entry for each industry member. To narrow the scope of this section, this analysis of H.R. 1555 focuses on the issues raised in the analysis of S. 652.

Universal Service

As with S. 652, H.R. 1555 relies on a joint federal-state board to evolve a definition of universal service. In defining universal service, the House requires the joint board to consider the extent to which a telecommunications service (Sec. 247(c)(1-4):

- Has, through the operation of market choices by customers, been subscribed to by a substantial majority of residential customers
- Is essential to the public health, public safety, or the public interest
- Has been deployed in the public switched telecommunications network
- Within a carriers' universal service obligations is otherwise consistent with the public interest, convenience, and necessity.

According to the House bill, the definition of universal service should rely in part on the following guiding principles (Sec. 247(b)(1-6):

- Just and reasonable rates
- Definitions of included services with comparability in urban and rural areas
- Adequate and sustainable support mechanisms to provide adequate and sustainable support for universal service
- All providers of telecommunications services should make an equitable and nondiscriminatory contribution to the preservation of universal service
- To the extent that a common carrier establishes advanced telecommunications services, such plans should include recommendations to ensure access to advanced telecommunications services for students in elementary and secondary schools.

The House definition and principles of universal service, therefore, differ significantly than those of the Senate. Indeed, the House primarily relies on the market place to determine what telecommunications services should be available throughout the country. The Senate, on the other hand, tends to rely on the public interest in determining a base level of telecommunications services.

Unlike the Senate, however, the House does specifically mandate the FCC to conduct a study, at least every three years, that (Sec. 252(1-2):

- Reviews the definition of, and the adequacy of support, for universal service, and evaluates the extent to which universal service has been protected and access to advanced services has been facilitated
- Evaluates the extent to which access to advanced telecommunications services for students in elementary and secondary school classrooms has been attained.

Such an assessment serves to inform policy makers as to the extent to which universal service goals are being met in general and in the k-12 community in particular. There is no such evaluation requirement or statement of principle in the House bill for public libraries.

Rural and High Cost Communities

The Senate and House bills differ perhaps most significantly in their treatment of rural regions of the country. Whereas the Senate telecommunications bill had a three-pronged escalating treatment of market forces, incentives, and mandates in promoting rural telecommunications services, the House bill has no specific provisions for rural community access to advanced telecommunications services beyond the bill's universal service statements of principle and definition. The House, therefore, relies strictly on market forces to include the nation's rural areas in the development of an advanced NII.

Furthermore, whereas the Senate bill provides a management mechanism through which to disseminate advanced telecommunications services to rural areas by way of the FCC, the House bill provides no management mechanism for such telecommunications services dissemination. As mentioned previously, the House bill provides for an assessment of universal service goals by the FCC but does not state the FCC's courses of action should there not be a meeting of those goals at the time of the assessment.

Support for the Education and Public Library Communities

As indicated in the previous discussion of S. 652, the Senate provides no specific support for the public library or education communities other than in statements of principles. The Senate does, however, specifically recognize the nonprofit National Education Technology Funding Corporation (NETFC) as an entity through which public libraries and the k-12 communities can solicit, collect, and distribute technology and instructional grants intended to promote access to and participate in the development of the NII. Similarly, the House includes the k-12, but not public library, community in its universal service principles. The House does not recognize the NETFC.

Obscenity and the NII

The House approaches the issue of creating, maintaining, and transmitting indecent material via public electronic networks in two ways that differ than the Senate's approach (Sec. 110(a)(1-3):

(1) Through a study by the Attorney General's office that reviews current laws regarding the distribution of obscene material via computer networks

(2) Through an evaluation of possible technical abilities to prevent such material, or at least the blocking of such material by those who desire not to receive it, from being broadcast via computer networks (referred to as the "V" chip).

The House, therefore, approaches obscenity via public networks more cautiously than the Senate, preferring to review current legislation and such legislation's applicability to electronic networks. In addition, the House encourages telecommunications technology manufacturers, telecommunications providers, and information providers to essentially offer users a technical means for blocking unwanted material from reaching them via electronic networks.

Summary

The House approach to telecommunications reform relies heavily on market forces and competition in all key areas. This can have a dramatic impact on public libraries' ability to transition to the NII, particularly as the House bill does not indicate a role for public libraries in the NII. The k-12 community fairs better in the bill, but the House's support for the education community appears in the form of "encouragement" to telecommunications carriers and principles to guide telecommunications governing bodies. The bill is, therefore, primarily concerned with introducing competition into the telecommunications market place rather than creating policy that defines a role for public institutions in the networked environment.

As is evident, the Senate and House telecommunications bills differ significantly in language and intent. The two houses, therefore, will have to compromise and develop a new telecommunications reform bill in conference. It is not possible to speculate as to what will comprise such a compromise bill.

The Clinton Administration and Telecommunications Reform

Any telecommunications reform bill from Congress will have to meet with the Clinton Administration's approval. The Clinton Administration released an extensive discussion of issues the administration had concerning S. 652 (Office of the White House, 1995). In essence, the Administration has concerns regarding the mechanisms through which competition and deregulation occur and not necessarily the spirit of the Senate reform. In terms of issues that can directly impact on public libraries, the Administration directly supports the Senate's approach to universal service. The Administration, therefore, raises issues of approach with the Senate bill over which the Administration appears to signal its willingness to work with the Senate in achieving a compromise.

Unlike with the Senate telecommunications reform bill, the Administration flatly rejects the House's approach to telecommunications reform. Vice President Gore issued a statement in which he signalled the President's intention to veto such a bill (Gore, 1995, p. 1):

> The telecommunications reform legislation being considered by the House of Representatives is abhorrent to the public interest and our national economic well-being. Without significant changes to the legislation, the President has said that he will be compelled to veto it.

It is likely, therefore, that the Administration and the Congress will need to work together to achieve a compromise on telecommunications reform. The lack of such a compromise will end this most recent attempt at telecommunications reform.

National Telecommunications and Information Administration Information Infrastructure Grants

Beginning with the 1994 Fiscal Year, Congress funded $26 million for the National Telecommunications and Information Infrastructure Assistance Program (TIIAP) administered by the National Telecommunications and Information Administration (NTIA) to (NTIA, 1994a, p. 1):

- Enhance the delivery of social services, such as education and health care
- Support the formation of an advanced nationwide, telecommunications and information infrastructure incorporating the widest variety of information technologies.

The TIIAP program is an administration-initiated matched funding program that seeks to promote intergovernmental, private sector, public interest group, and public institution collaboration to connect various organizations to the emerging NII (NTIA, 1995). Moreover, as part of the TIIAP program, the administration views the public library playing (NTIA, 1995, p. i):

> An increasingly important role because a changing economy requires that workers continuously learn new skills. Connecting libraries to the NII is critical to ensuring that all Americans can obtain information and services and benefit from life-long learning opportunities, regardless of economic circumstances and geography.

Of the 92 FY1994 TIIAP grants totalling $24,362,928, five went directly to libraries for a total of $1,851,840 representing 7.6% of all funds (NTIA, 1994b, p. 1). While the numbers are small, there are some major public library-run networked initiatives such as the Charlotte's Web project run through the Public Library of Charlotte and Mecklenberg County and the San Francisco Connection Library Project coordinated by the San Francisco Public Library to which the TIIAP program provided extremely important seed money. While no precise figures are available, libraries were a part of some of the other grant recipient communities. NTIA will announce FY1995 recipients in the fall of 1995.

It remains unclear as to the priority the NTIA TIIAP program in general and public libraries in particular will hold for the Administration and Congress. For FY1995, the Administration requested and the Congress appropriated $64,000,000. Of this amount, $4,000,000 was rescinded (P.L. 104-19, 109 STAT 200), down from the original suggestion of a $30,000,000 recision. For FY1996, the administration requested $99,912,000 for the TIIAP program, of which no more than $5,191,000 should go towards program administration and support services. The House, however, appropriated $40,000,000 for the TIIAP program in FY1996, of which no more than $4,000,000 is to go towards program administration and support services (H.R. 2076, Title II). The Senate has yet to take action on the House's bill.

The small but important overall number of public library grant recipients for FY1994, combined with the downward trend in appropriations and recent rescissions, seems to indicate that there is a decreased emphasis on NII funding initiatives in general and public library NII projects in particular. Senate action for FY1996 TIIAP funding and FY1995 TIIAP award recipient announcements are pending.

Summary

As the above selective review of current public library-related policy documents indicates, the existing policy environment impacting on public library NII participation is volatile and fragmented. There appear to be only two constants in this environment -- change and budget reductions. It is difficult in such an environment, therefore, to uncover and define a federal role in support of public library NII initiatives.

The next section presents and discusses an overview of the study's findings as detailed in the *Compendium*.

FINDINGS

In June, 1995 the study team issued a *Compendium* to the final report that identified a number of findings from the study. The *Compendium* offers numerous findings from the various data collection activities. This section highlights key findings from that report.

Public Library Roles

The possible roles of public libraries in the Internet/NII are not well understood by governments, the library community, and the private sector, although there are excellent examples of individual states and public libraries in which Internet-based services are currently being provided. The site visits and literature review have revealed a number of roles which public libraries are

providing and have improved through the provision of the Internet/NII services. These include:

- Network literacy center: the public library provides training and education for community members on how to access and use the Internet/NII, how to identify and obtain electronic information resources, and how to transact electronic commerce and obtain electronic services.

- Global electronic information center: the public library provides community members with "on demand" electronic information reference resources and services.

- Liaison for government information: the public library is the key point of contact and liaison for providing citizens with access to local, state, and Federal electronic information and services.

- Center for electronic life-long education: the public library is an electronic classroom that can provide community members with a broad range of educational opportunities.

- Public access center: the public library is a community center that provides public access terminals and dial-in capabilities for patrons to access the Internet.

- Community information organizer and provider: in collaboration with local government, the school system, and other local organizations, the public library is the hub for linking and managing local information resources and services.

- Economic development center: the public library supports local economic development through job/career information and skill assessments, small business supporter, and by promoting liaisons and collaborations among local community services.

These proposed roles suggest new directions for public libraries -- quite different than the roles proposed in the manual *Planning and Role Setting for Public Libraries* (McClure, et. al., 1987). They will require a significant investment in information infrastructure and uses of new information technologies. Some of the options for transitioning to the "electronic library" are outlined in *Costs and Cost Models for Public Libraries* (McClure, Bertot, and Beachboard, 1995).

Public Library Connectivity

The cost and availability of communications connectivity remain key factors in determining whether public libraries will be able to provide Internet/NII

services. The public library Internet connectivity environment can be characterized by the following findings:

- There are significant disparities among libraries as to which have Internet access. Some 79% of the Nation's urban libraries (serving populations of 250,000 or more) have some type of connection to the Internet while only 17% of rural libraries (those libraries serving populations of 25,000 or less) are connected. Different reasons and barriers can be offered for why such disparities exist -- but it is important to recognize that these disparities, currently, do exist.

- There is limited, but increasing, connectivity and public access to the Internet through the Nation's public libraries. The 1994 national survey found that of the 21% of libraries that have an Internet connection only 9% of these libraries provide public access terminals for patron access to information resources and services on the Internet. Although this research did not systematic resurvey of library Internet/NII connectivity, we found substantial indication that public rapidly increasing numbers of public libraries are introducing Internet services for their staffs and patrons.

- Rural libraries continue to face significant challenges connecting to the Internet/NII due to the added communications costs associated with accessing Internet provider's points-of-presence which are typically located in urban areas and an inability to identify a critical mass of users required to entice Internet providers to extend their services into rural areas.

- While connectivity costs for particular telecommunications services are generally being reduced, public libraries are still facing level or increasing telecommunications costs due to the increased bandwidth (communications capacity) requirements of new multimedia capabilities.

- There are a number of different connectivity and costing models for libraries to transition to the networked environment depending on their current -- geographic as well as financial -- situation (McClure, Bertot, and Beachboard, 1995).

Other Barriers to Establishing Public Library Connectivity

A combination of barriers typically affect a library's ability to use the Internet depending on a library's particular circumstances. In addition to the costs of telecommunications connectivity other barriers to connectivity include:

- Costs to develop and maintain the libraries internal information infrastructure, i.e, the necessary hardware, software and internal communications connectivity (LANs)

- Library staff's awareness and knowledge of the Internet

- Lack of internal library technical expertise to identify an appropriate provider, utilize the new computer/telecommunications technologies, and obtain and maintain connectivity

- Level of community and library governing board interest in having Internet connectivity via the public library.

- Many libraries are under-funded and have inadequate resource support to maintain traditional services, to say nothing of supporting Internet-based services.

Impacts of Public Library Connectivity

There have been significant impacts resulting from public library connectivity:

- Empowering individuals by training or retraining them in uses of new information technologies

- Increasing the global perspectives of community members by connecting them to virtual, geographically dispersed communities around the world.

- Promoting the economic development of the community

- Providing for enhanced local educational infrastructures

- Introducing new information technologies and information resources to the local community

- Leveraging the information infrastructure with other institutions to otherwise benefit the community.

Additional detail on these and other impacts are described in the *Compendium*. But it is clear that a number of public libraries have had significant impacts on their local communities by establishing Internet-based services.

Planning Public Library Internet Connectivity

During the course of this study, members of the research team visited several leading-edge public libraries and state public library organizations. The following findings attempt to capture the essence of these organizations have successfully implemented Internet connectivity:

- Scan the library's environment. How much community or trustee interest in the Internet and providing Internet service is evident? Are there some segments of the local community more interested than others? How can you obtain their support and involvement? What is the funding outlook?

- Develop a vision for what the library's Internet connectivity and services should include. The NCLIS study, *Internet Costs and Cost Models for Public Libraries* (McClure, Bertot and Beachboard) should help but read other books and magazines, visit other libraries offering Internet services, and talk to other librarians regarding their experiences. Think both near term and longer term. Other sources of information are provided in the references section of this report.

- Find a champion or be a champion. The successful libraries visited by the study team generally rely on the efforts of one or a few highly committed individuals willing to expend the time and effort required to move the project forward.

- Seek out partners for collaboration. The research team identified a variety of collaborative arrangements used by libraries and library consortiums to achieve a critical mass of users and to leverage investments in information technology and technical expertise.

- Locate patrons or other staff members who have the necessary technical expertise and recruit them to your effort. Many libraries are too small to have their own staff knowledgeable in technical matters. Computer hobbyists (staff or patrons) can prove invaluable for technical planning and assisting staff and patrons with implementation and training.

- The amount of formalized planning required to implement Internet connectivity clearly depends on the magnitude of the project attempted. But regardless of the project size, it will be beneficial to formally identify significant tasks and milestones and assign responsibilities (both action and funding) for those tasks.

- Expect to need additional education and training. Entrance into the networked environment requires many librarians, trustees, and

community members to upgrade their knowledge and skills related to computers, telecommunications, and networks. Obtain this knowledge and the appropriate skills.

- Most important of all is to act. The successful libraries we visited proceeded with some type of implementation even when they had unresolved issues concerning policies, training, and funding. If the managerial and funding support exist and technical assistance is available, certainly expend some time and effort planning your architecture and implementation. This will minimize the purchase and acquisition of soon-to-be-obsolete equipment. But if it is necessary to start small to start at all, do not worry about acquiring "the perfect" configuration. Just proceed!

These "critical success factors" played an important role in transitioning to the networked environment in the leading edge libraries the study team visited. Throughout the study the importance of attitude, i.e., a "can do" perspective was critical for the libraries' success.

A New Policy Context

Throughout the study, a new and evolving Federal policy context developed. At the beginning of the study the Clinton Administration rhetoric on the importance of libraries in the Internet/NII provided a basic framework for NII policy initiatives. Statements from the IITF continued to stress the important role of libraries and encouraged libraries, schools, and other public sector organizations to get connected to and use the Internet. Congressional initiatives from the 103rd Congress, such as Representative Boucher's HR 1757, offered strong language that supported the transition of libraries into the global information environment.

Beginning in 1995, the Federal policy context regarding libraries and their role in the Internet/NII changed considerably. The new composition of the House and the Senate brought changes in priorities and philosophy regarding the development of the Internet/NII. The Clinton administration, while still supporting public sector development of the Internet/NII, found other issues of increased importance and was unable to devote the time and resources for new policy initiatives related to libraries and the Internet/NII.

Summary of Findings

These findings can perhaps be best generalized by the term "change." All aspects of the public library Internet connectivity environment are experiencing rapid changes. Communications and information processing technologies are rapidly evolving. New services, commercial and non-commercial, are being

established daily. Public awareness is growing that the NII implies capabilities significantly beyond 500 channels of cable-TV.

At the same time there is a growing skepticism concerning the quality and benefits of government services. All levels of government are facing significantly more austere funding environments. Public libraries must expect to face increasingly difficult times in competing for resources to maintain existing services while simultaneously introducing new Internet/NII-based services.

As illustrated above, public libraries can make important contributions to achieving national economic and educational objectives. But to do so, public libraries must be willing to change as well. Libraries need to determine which services wili best meet the needs of their communities. Some reprioritization of existing resources should be expected. Public libraries (particularly those serving rural areas) need to be open to the possibility of collaboration with other libraries, public schools, colleges and other community service organization to achieve a critical mass of users required to afford Internet/NII services and to leverage their investments in technology and the acquisition of technical expertise to better meet the needs of their communities.

From the findings, the authors developed several policy initiatives at the federal, state, and local government levels. The next section of the report details these initiatives.

POLICY INITIATIVES

A number of different types of policy initiatives can be proposed at the Federal state, and local levels. The study found that it is essential for initiatives to be considered and coordinated at all levels of government and with other key stakeholder groups. Additional initiatives for the library professional community, local public libraries, and vendors also should be considered and are also summarized in this section. Figure 2 summarizes *all* the proposed initiatives.

If public libraries are to serve as a means to enhance public access to the Internet and the evolving NII, a coordinated effort to marshal resources and develop strategies from a number of key stakeholders will be necessary. In considering appropriate initiatives and strategies, the study team used the following criteria to develop these initiatives and strategies:

- Goals: The goals for each of the initiatives should enhance public access to the Internet/NII

- Practicality: The initiatives should be feasible and "doable;" it should be possible to establish a schedule and tasks to implement the initiative.

- Cost: The costs to implement a particular initiative should be reasonable and affordable by those implementing the initiative.

- Responsibility: Who or what has responsibilities to implement these strategies should be made clear.

The study team also considered the priority that each of these strategies and initiatives should be given. The priorities were assigned in terms of high or moderate priority within a short-term or long-term context.

Federal Government Policy Initiatives

1. Pass legislation that coordinates and consolidates all library programs, e.g., the "Libraries Improvement Act (LIA) of 1995."

Such an act would have as its goal to increase the effectiveness by which libraries of all types have access to and use Internet/NII resources and services. Aspects of the "Library Services and Technology Act" proposed by the American Library Association could form the basis for such an Act. The act would replace aspects of the "Library Services and Construction Act," the "Elementary and Secondary Schools Act," and the "Higher Education Act." The LIA would encourage collaboration across types of libraries, enhance the role of libraries in education and training related to the Internet/NII, and would provide seed monies for demonstration projects that enhance public access to and educational uses of the Internet/NII. The LIA would be one Act that coordinates and links all library programs into a single program initiative.

2. Revise and pass the *Telecommunications Competition and Deregulation Act of 1995* (S. 652).

This Act can strengthen the role of libraries in and support public access to the Internet/NII by (a) strengthening language related to the importance of universal access to the Internet/NII and the role of libraries in that effort (Section 253 ...adding "libraries"), (b) changing the language related to the composition of the Universal Access Board to include representatives from the public sector (section 103), and (c) include language originally in the Boucher Bill of 1994 (HR 1757) that provided support for the training of librarians and others to promote network literacy and encourage universal access. Section 305 (b) of H.R. 1757 states that the program will:

> Train teachers, students, librarians, and state and local government personnel in the use of computer networks and the Internet. Training programs for librarians shall be designed to provide skills and training materials needed by librarians to instruct the public in the use of hardware and software for accessing and using computer networks and the Internet.

Such language and support for libraries should be incorporated into S. 652.

3. The FCC should issue regulations that facilitate public library and school access to the Internet.

Although section 304 of the *Telecommunications Competition and Deregulation Act of 1995* (S. 652) "encourages" the FCC and state public service/utility commissions to create a regulatory environment that supports the extension of telecommunications services to all Americans, particularly schools, the FCC needs to adopt policies that:

- Provide telecommunications carriers with regulatory and tariff incentives to connect public schools and libraries to the Internet/NII.
- Ensure equitable and reasonably priced access to NII-based information services for all Americans, particularly those located in rural areas.
- Foster collaboration between Federal and state telecommunications regulators that allows for the establishment of universal access guidelines within which regulatory entities and providers can operate.

4. The Federal Government should update Title 44 U.S.C. to establish a restructured and electronic depository library program.

Depository libraries could be reduced in number, restructured, and seeded with funds to develop a distributed architecture of Federal information servers accessible via the Internet. Executive Branch departments and agencies could be encouraged to use depository servers rather than having to develop and maintain their own server architectures. Public access (as well as access from external government agencies) to Federal information could be improved by mounting copies of the information in multiple locations throughout the United States. Federal agencies would additionally benefit by limiting the exposure of agency processors to the security risks associated with widespread public access. Public libraries would serve as a one-stop key point of contact for access to government information resources and services.

5. Include public librarians and those knowledgeable about libraries in NII planning initiatives.

The Clinton Administration, as well as the Congress, considers public libraries to be natural universal access points to the NII. Indeed, President Clinton and Vice President Gore have, on several occasions, identified public libraries as appropriate community-based institutions that can ensure the equitable distribution of and access to NII-based information and services. The reality, however, is that the public

FIGURE 2
SUMMARY OF POLICY INITIATIVES AND STRATEGIES

Federal Government Policy Initiatives

1. Pass legislation that coordinates and consolidates all library programs, e.g., the "Libraries Improvement Act (LIA) of 1995."

2. Revise and pass the *Telecommunications Competition and Deregulation Act of 1995* (S. 652).

3. The FCC should issue regulations that facilitate public library and school access to the Internet.

4. The Federal Government should update Title 44 *U.S.C.* to establish a restructured and electronic depository library program.

5. Include public librarians and those knowledgeable about libraries in NII planning initiatives.

6. Include NII development programs as part of any block grant initiatives.

7. Issue an Executive Order authorizing and encouraging Federal Agencies to collaborate with state and local governments on development of information infrastructures capable of supporting electronic dissemination of government information and delivery of government services.

State Government Policy Initiatives

1. The states should pass legislation directing the state's public utility commission to establish "preferential" telecommunications pricing regulations for educational institutions (minimally -- schools, colleges and public libraries.

2. The states should develop and implement a program by which all state residents are within local dialing distance of a networking point-of-presence (state network, Internet or commercial provider).

3. States should develop electronic depository programs through which state information (e.g. legislative actions, regulations, economic data, job information, etc.) would be available via the Internet.

4. Legislation should be passed (if not already done) that specifically authorizes the legal establishment of collaborative arrangements among (a) city, county, multi-county and school libraries, and (b) libraries and other public sector organizations.

FIGURE 2
SUMMARY OF POLICY INITIATIVES AND STRATEGIES (continued)

5. States should consider leveraging investments in other government program areas to improve the state's public library infrastructure and public access to the NII.

State Library Initiatives

1. State Libraries should establish specific policies that affirm electronic information delivery services as a legitimate and important library service.

2. State library agencies should take the lead in creating a vision for statewide delivery of electronic (public interest) information services.

3. The state libraries should seek to modify statutes governing the establishment and operation of public libraries to specifically permit and encourage, by provision of state grants, local and regional collaboration in providing electronic information services in order to leverage public library technology investments.

Local Government Initiatives

1. Work with state telecommunications authorities to encourage and promote favorable tariff structures for public institutions.

2. Collaborate with local entities to leverage telecommunications and hardware resources to create a local information infrastructure.

Library Profession Initiatives

1. The America Library Association, as well as other library associations should issue policy statements which explicitly recognize the importance and benefits of using electronic information resources, such as the Internet, in public libraries.

2. Library associations, in conjunction with library/information science schools, should sponsor the development of new education standards for librarians that incorporate knowledge and use of electronic information resources and technologies.

3. The ALA, or some other organization, should sponsor the establishment of a clearinghouse to provide an electronic meeting place for librarians to give and receive information, ideas, strategies, tools, policies, cost assessments, information resources on the Internet and elsewhere, and anything else related to the electronic delivery of library services.

4. The ALA, and/or other appropriate organizations, should establish technical committees to identify and articulate the service needs of public and school libraries to the vendor community.

FIGURE 2
SUMMARY OF POLICY INITIATIVES AND STRATEGIES (continued)

5. The ALA, state library agencies, National Information Standards Organization, and other professional associations, should encourage and participate in the development of standards for organization of electronic information.

Local Public Library Initiatives

1. Take the lead on creating and establishing a community's Internet access and services.

2. Form local community and library partnerships.

3. Reallocate current library resources for Internet-based services.

4. Study cost-effectiveness of Internet-based commercial information services over traditional paper and CD-ROM services.

Vendor Initiatives

1. Develop, centralized, integrated, automated library services that include full Internet access with a range of services/pricing options.

2. Consider public libraries and public schools as a market.

library community is not a part of the Administration's NII management structure. Instead, the Administration and the Congress both rely on the private sector to build, populate, and manage the NII. The Administration, in its goal to avoid a "society of information 'haves' and 'have nots'," (Office of the White House, 1994, p. 1) needs to promote and support the participation of public librarians in the planning and development of the NII.

The Administration could appoint a public librarian to the Department of Commerce's Advisory Council on National Information Infrastructure. Public librarians could also be appointed to other NII governmental advisory bodies. This would bring the public library community to the NII table and allow public libraries to work towards universal access issues and guard against a society of information "have nots" on a national level, a specific goal of the Administration.

6. Include NII development programs as part of any block grant initiatives.

Should Congress decide to combine and coordinate various Federal programs into a block grant structure to be administered by the states, programs should be included for developing and supporting local information infrastructure resources and programs via the Nation's libraries. These resource commitments might take the shape of some form of set percentage or might be specifically mentioned and described as "NII Development Programs." Such programs could be competitive awards to serve as seed money for innovative programs or basic connectivity awards for local communities meeting certain requirements. These requirements could include some cost sharing and collaboration among local organizations.

7. Issue an Executive Order authorizing and encouraging Federal Agencies to collaborate with state and local governments on development of information infrastructures capable of supporting electronic dissemination of government information and the delivery of government services.

In order to accelerate development of the NII, a critical mass of services and users is required to generate demand for commercial communications providers to invest in new technologies. Some states (e.g., North Carolina), have encouraged such investment by committing to become customers of these new services. As the costs of these new technologies are still high, however, it is difficult for state and local governments alone to generate sufficient levels of demand. Federal participation in such collaborative efforts, designed to meet legitimate agency networking needs, may provide the added customer base to make these projects viable. Coordination of Federal, state and local networking requirements can lay the groundwork for more cost-effective exchange of information between government levels and joint electronic delivery of governmental services. To the extent that different levels of government request the same or similar information from individuals and businesses, such collaboration is also consistent with the objectives of the Paperwork Reduction Act and the Office of Management and Budget Circular A-130.

This initiative is primarily of interest to the public library community because such collaborations could result in the availability of lower cost and higher performance communications services to meet public library networking needs -- particularly in rural locations.

State Government Policy Initiatives

At the state level, the state government and the state library agency must coordinate policy initiatives and work together in enhancing the state's information infrastructure and promoting access to and use of the Internet/NII. Boundary lines between state government and state library initiatives are not always clearly evident. Nonetheless, the following initiatives suggest areas for action for both state governments and state library agencies.

1. The states should pass legislation directing the state's public utility commission to establish "preferential" telecommunications pricing regulations for educational institutions (minimally -- schools, colleges and public libraries).

Preferential pricing does not necessarily imply direct subsidization of telecommunications costs. In many states, institutional pricing for basic communications services and toll charges are priced substantially above cost in order to subsidize residential services. It is counter-productive to charge financially-strapped educational institutions to support residential subsidies. Minimally, rate structures should be established for these institutions which do not carry the added charges associated with cross-subsidization.

2. The states should develop and implement a program by which all state residents are within local dialing distance of a networking point-of-presence (state network, Internet or commercial provider).

The states need to identify regions in the state that are not within local dialing distance of electronic network services. Residents, businesses, and government agencies in these areas are severely disadvantaged in making use of electronic networking services due to the relatively high toll charges associated with intrastate toll calls. States should explore options for establishing local network services in these areas. This could be accomplished by providing financial incentives to commercial network providers to extend their service access points into these areas or by direct funding of public access points located within local schools or libraries.

3. States should develop electronic depository programs through which state information (e.g. legislative actions, regulations, economic data, job information, etc.) would be available via the Internet.

Most states incur expenses for dissemination of government information to the public. Technology has advanced to the point where it would be cost-effective to

disseminate some of this information electronically. While a variety of technological models could be employed, performance and cost advantages might be achieved by developing distributed architecture which information servers could be located within and supported by local public libraries. Such a distributed architecture could open the opportunity for collaborative development of local information infrastructures in participation with local governments and possibly with selected federal agencies. The architecture could additionally be examined as a predecessor for electronic delivery of state government services.

4. Legislation should be passed (if not already done) that specifically authorizes the legal establishment of collaborative arrangements among (a) city, county, multi-county and school libraries, and (b) libraries and other public sector organizations.

Provisions for participation in the state's inter-library loan and sharing of reference services commonly exist. However, specific authorization for joint ownership and governance of library information technology (IT) systems and providing technical services (e.g., purchasing and cataloging) may allow both small and large libraries to leverage their IT investments. Such leveraging would assist libraries to provide, in a more cost-effective manner, a wider range of electronic information services to their patrons.

5. States should consider leveraging investments in other government program areas to improve the state's public library infrastructure and public access to the NII.

No government agency can escape the fiscal constraints of today's environment in which agencies and programs generally have more obligations with less funding. Moreover, there is a desire to evolve current programs into new programs that create less of a dependence by individuals on government (e.g., welfare to workfare). Such transitions generally require the expenditure of different and new resources, particularly in the acquisition of information technology. For example, if the state is investing in job training programs, it might be possible to use part of that investment to add automated training facilities in local public libraries. The investment in personal computers purchased for training purposes could then be leveraged to provide improved automated support for library patrons when job training classes are not in session. Another example would be to extend library hours in inner city locations to provide urban residents a socially beneficial recreational alternative -- midnight libraries.

Other synergies are imaginable given the availability of information resources at most public libraries. The key is for state governments, in conjunction with local communities, to be strategic with their resource expenditures and seek the formation of logical and beneficial partnerships that assist states to better leverage their resources. It is important, for such initiatives to succeed, for each potential

partnering entity to think out of its box -- be it a library or occupational retraining box -- and realize the potential of combining forces.

State Library Initiatives

1. State Libraries should establish specific policies that affirm electronic information delivery services as a legitimate and important library service.

This policy should be clearly articulated in state statutes, statewide standards, and any other state regulations or policies that govern the establishment and operation of public libraries. Networking to external information services and serving as electronic repositories of information of state and local interest is in the best interests of libraries, state governments, and the general public. The state library can take on a leadership stance both by example and by promulgating and promoting such policies.

2. State library agencies should take the lead in creating a vision for statewide delivery of electronic (public interest) information services.

A vision statement is, in essence, a statement of an idealized future state -- e.g., "By the year 2000, every classroom and every public library will have broadband access to the national information infrastructure." Such a vision statement guides the decision making process of network initiative planners, to include establishing the goals, objectives, and evaluation criteria for the network. For example, network planners should minimally consider the types of information and information services the network is to support, a recommended statewide architecture for supporting those services, and a strategy for implementing that architecture.

This initiative does not imply or preclude a state-owned and operated architecture. Indeed, a state library can pursue a variety of public, private, or public/private solutions to effectively realize its vision. The state library would need to seek political support to pursue its network initiative through working with the state legislature and governor.

3. The state libraries should seek to modify statutes governing the establishment and operation of public libraries to specifically permit and encourage, by provision of state grants, local and regional collaboration in providing electronic information services in order to leverage public library technology investments.

Decreases in communication costs resulting from deregulation as well as technological advances are rapidly changing the economics of information system design. Where low-cost computers encouraged the distribution of processors into user locations, low-cost communications is again making it cost-effective to centralize certain types of automation support in order to minimize system hardware and software investments as well as system operations costs -- particularly

in the area of technical support personnel. Considerable savings are possible by consolidating library automation services such as OPACS, information servers and Internet gateways.

The state libraries should encourage collaborative efforts by developing policies, guidelines, and standards which specifically permit joint funding and operation of shared information system facilities and by appropriating funds to seed their development in a manner similar to the National telecommunications and Information Administration's Telecommunications and Information Infrastructure Assistance Program (TIIAP).

Local Government Initiatives

1. Work with state telecommunications authorities to encourage and promote favorable tariff structures for public institutions.

Public libraries, public schools, local governments, and other local public institutions, due to their often dispersed nature, require different types and structures of Internet connections than other organizations. Oftentimes, a public library and/or public system crosses existing LATA boundaries, which serves to complicate the task of connecting the systems to the Internet.

Indeed, our research found that, although the same local exchange carrier (LEC) provided telecommunications services to the adjacent LATAs serving the same public library system, the LEC in each LATA offered different rates and services. In essence, this created a situation in which the establishment of a public library Internet network was literally easier across the street.
Local governments need to work with state public service/utility commissions (PSC/PUC) in order to simplify the rate and service structures for public institutions such as public libraries and schools in order to facilitate the connection of such institutions to the NII.

2. Collaborate with local entities to leverage telecommunications and hardware resources to create a local information infrastructure.

Within any given community, one can find a variety of institutions -- public or private -- connected or in the process of connecting to the Internet. Such institutions (particularly higher education institutions), through their experience in the networked environment, have expertise and resources that can serve to assist other local entities gain access to the Internet. Moreover, within any given community, there are information resources that could be digitized and made available via the Internet, thus benefiting the community-at-large (e.g., local historical archives, special library collections).

By pooling together and forming collaborative information infrastructure initiatives, local communities can leverage existing technical and information resources and create local information infrastructures. Local governments can coordinate and facilitate this process by serving as liaisons between the local business, school, library, university, and state communities.

Library Profession Initiatives

1. The America Library Association, as well as other library associations should issue policy statements which explicitly recognize the importance and benefits of using electronic information resources, such as the Internet, in public libraries.

Professional association leadership is required to move the library community from the print-based environment to the "information superhighway." Clearly, making paper-based publications available will continue to be an important library service for the foreseeable future. However, new electronic services are important as well. And how well public libraries are able to support these new services may determine their long term viability. Policy statements that explicitly identify the importance of providing electronic information as a library service will make the associations' position clear, not only to policy makers, but to librarians who have shown little enthusiasm for incorporating these new technologies and services into their libraries.

2. Library associations, in conjunction with library/information science schools, should sponsor the development of new education standards for librarians that incorporate knowledge and use of electronic information resources and technologies.

Library/Information Science schools, according to library administrators and professionals whose libraries are on the forefront of networked services, are graduating library professionals who are ill-equipped in terms of technology and network literacy to operate within the electronic networked environment. Library associations need to work with the library professional and educational community to establish educational guidelines for the library profession. To do so, library associations could form permanent committees, conduct panels and workshops at professional conventions, and hold meetings of library educators, state library committees, and other student/professional forums. Guidelines are needed at two different levels, (1) new graduates must be network and technically literate, and (2) current practitioners must receive continuing education and updates to keep them knowledgeable about new developments.

3. The ALA, or some other organization, should sponsor the establishment of a clearinghouse to provide an electronic meeting place for librarians to give and receive information, ideas, strategies, tools, policies, cost assessments, information resources on the Internet and elsewhere, and anything else related to the electronic delivery of library services.

Such a clearinghouse could be modeled after the successful ERIC approach or might even become part of an ERIC clearinghouse. At present, the profession does not have a central place they can look for help with networking and examples of how other libraries are addressing similar issues. This clearinghouse would give librarians a solid base of support from which to start building their networking initiatives. Information from the clearinghouse must be available in *both* electronic and print formats to assist those libraries that are not, as yet, connected.

4. The ALA, and/or other appropriate organizations, should establish technical committees to identify and articulate the service needs of public and school libraries to the vendor community.

Librarians are sometimes hampered in offering services because vendors have not yet understood unique library needs. Individual librarians may not be adequately technically informed to clearly articulate their needs and the vendors typically face fragmented demand by dealing with individual library systems. The development of sound technical standards and service demands can assist librarians and vendors in understanding the unique requirements of public libraries and accelerate the development of required capabilities (hardware, software and electronic services). These committees may also help vendors by suggesting sites where new services can be evaluated and then helping publicize their availability within the library community.

5. The ALA, state library agencies, the National Information Standards Organization, and other professional associations, should encourage and participate in the development of standards for organization of electronic information.

The lack of organization of information and services on the Internet makes it difficult to offer electronic resources to patrons and discourages librarians from trying to use Internet. A few libraries are identifying exemplary information resources onto Gopher menus or Web sites, but this varies for each library. A formal (or informal) standards body could provide guidelines as to how information should be organized and presented to patrons and networked information seekers. Professional leadership in this area is essential.

Local Public Library Initiatives

1. Take the lead on creating and establishing a community's Internet access and services.

Progressive public librarians within a variety of service communities -- urban and rural -- find that public libraries can serve as a local community's primary Internet access and service point. While many communities now know what the Internet is, as many do not realize the potential benefits to the community of the Internet's vast information resources. Public libraries can demonstrate to the community the Internet's potential for access to information resources, economic development, and service provision cost reductions. Our research indicates that libraries that progressively pursue Internet connections within a community can become local information infrastructure leaders and serve major roles in the development of community-based networked information services. In some cases, for example, the public libraries are the Internet gateway for local governments, providing local government officials with e-mail accounts and other Internet-based services.

2. Form local community and library partnerships.

Resources are scarce for all public institutions. In order to leverage existing community resources -- e.g., community colleges, universities, public library, and public schools -- public libraries need to forge partnerships with existing community institutions in order to transition to the networked environment. Moreover, public libraries need to be strategic in their partnership formation and seek out institutions that have expertise, equipment, facilities, and telecommunications capabilities onto which public library Internet access initiatives can piggy back. In an era of dwindling resources, it would be fiscally detrimental to communities for each public institution to individually develop and maintain its own Internet initiative.

3. Reallocate current library resources for Internet-based services.

In some cases, public libraries do not receive community support for additional programs such as Internet connectivity. In such instances, public libraries may pursue Internet connectivity on their own, gathering the necessary resources to finance such a venture from savings in existing library programs. This approach involves both risk and reward, particularly as a library's Internet program receives public scrutiny. Successful libraries using this approach balance existing services with their Internet programs, and demonstrate to community leaders and patrons that library access to the Internet actually enhances and broadens the public library function. A public librarian becomes, therefore, a marketer of Internet connectivity, emphasizing the Internet's impact on the community.

4. Study cost-effectiveness of Internet-based commercial information services over traditional paper and CD-ROM services.

Increasingly, commercial information service providers (e.g., Dialog, CARL Uncover, FirstSearch) are providing Internet-based information services that parallel their traditional CD-ROM-based and other format services. Public libraries, particularly as the reliability and quality of these Internet-based services approach that of the traditional services, need to evaluate the cost-effectiveness of accessing such information services via the Internet. Public librarians indicate that the costs and availability of such network-based services is approaching that of the traditional services. It is, therefore, feasible that a library may get its necessary information services AND access to the Internet without an increase in services charges. There are, undoubtedly, other issues of training and required Internet connection expertise that libraries will need to address.

Vendor Policy Initiatives

1. Develop, centralized, integrated, automated library services that include full Internet access with a range of services/pricing options.

If a variety of commercial banks and insurance companies have found it cost-effective to outsource their information processing requirements (the EDS model), it seems likely that vendor-provided library service centers might also be cost-effective for providing OPAC, Internet access and other electronic information services for libraries otherwise unable to implement their own OPACS or Internet gateways. Vendors should work with libraries to identify requirements in this area and develop products and services that can be easily integrated into library automation.

2. Consider public libraries and public schools as a market.

According to the National Center for Education Statistics (NCES), there are some 9,000 public library systems in the United States that have over 15,000 branches (NCES, 1994). In addition, the NCES estimates that there are over 77,000 public schools at the elementary and secondary education levels in this country (NCES, 1995). From a market perspective, the public library and public school markets are large. Moreover, public schools and libraries, allowing for some variation in local needs, more than likely have similar Internet connection and information service requirement needs. Network Information services providers and vendors need to view public libraries and schools as a market with special needs and set out to meet those needs through their pricing and level of service structures.

In order to present the findings presented in this report and the *Compendium*, the authors will pursue multiple dissemination strategies and methodologies. The following section details and discusses these strategies.

FINAL REPORT DISSEMINATION ACTIVITIES

The study team intends to pursue multiple project product dissemination strategies upon submission of the final report. These strategies include, but are not limited to, the:

- Distribution of the final report or policy initiatives summary to key policy makers
- Distribution of key study findings through an executive summary to relevant and interested policy makers, stakeholder groups, researchers, and practitioners
- Publication of a separate report funded in part by this research grant and the National Commission on Libraries and Information Science (NCLIS), entitled *Internet Costs and Cost Models for Public Libraries*, through the Government Printing Office (GPO) in late June, 1995
- Publication of journal articles based on the study's data collection activities and findings
- Presentation of study findings at national conferences and speaking engagements
- Electronic publication of selected study documents on the Syracuse School of Information Study's World-Wide Web (WWW) server (http://dataserver.syr.edu/).

Such dissemination activities assist to inform appropriate policy makers, stakeholder groups, researchers, and practitioners of the study's findings. Furthermore, these dissemination strategies serve to inform the policy debate concerning the role of public libraries in the evolving national information infrastructure (NII).

Public Library Internet Cost Study Report Publication

Through NSF research support and additional research support provided by NCLIS, the authors will release *Internet Costs and Cost Models for Public Libraries*. This report identifies Internet-related cost categories and elements that public libraries encounter when connecting to the Internet or providing Internet-based services. In addition, the report provides readers with cost models associated with a variety of public library Internet connectivity configurations.

NCLIS published this report in June, 1995 through the GPO (see attached press release). NCLIS printed 2,500 copies of the report and may request additional

printings as needed. NCLIS will provide a copy of the report free of charge to those who request a copy as well as distribute the report to the 1,400 Federal Depository Libraries.

Distribution of Final Report and Policy Initiatives Summary

In order to maximize the impact of the study's findings and policy initiatives on the policy debate surrounding public library roles in the NII, the study team will distribute copies of the final report as well as a summary of the policy initiatives to key policy makers at the federal, state, and local government levels.

As the study progressed, the study team compiled a list of key policy maker contacts within a variety of federal, state, and local government positions. These individuals participate in and shape the policy development process that directly influences public library roles in the NII.

Distribution of Executive Summary

The study team conducted numerous data collection activities with a variety of policy makers, stakeholder groups, researchers, and practitioners at the national, state, and local levels during the research project (detailed in the *Compendium*). The research team intends to publish an Executive Summary of key study findings and distribute the Summary to the study participants.

Also, the study team identified and maintained a list of additional policy makers and stakeholder groups to whom key study findings could be of interest. The researchers will distribute copies of the Executive Summary to these individuals and groups as well.

Publication of Study Findings in Journal Articles

The results from this study are of potential interest to several journals -- *Library Journal, Public Libraries, Government Information Quarterly*, to name a few. The researchers will pursue appropriate publication opportunities with these and other journals. To ensure that study findings have the greatest impact possible on policy debates concerning public library roles in the NII, the researchers will seek publication opportunities that target policy makers, various stakeholder groups, and practitioners.

Conference Presentations and Speaking Engagements

The researchers intend to submit papers to a variety of conferences for publication in conference proceedings as well as conference presentations. The researchers will specifically target conferences that consider telecommunications

and information policy issues, such as the American Society for Information Science (ASIS) and the annual Telecommunications Policy Research Conference.

In addition, members of the research team receive frequent requests to provide presentations on a variety of topics, including recent research projects. Indeed, on several occasions throughout the project, members of the research team presented preliminary study results at such engagements and recorded participant discussions as well as solicited participant feedback on study findings. Study team members will continue these presentations.

Electronic Dissemination of Selected Study Documents

The School of Information Studies at Syracuse University operates a WWW server (http://dataserver.syr.edu/) to which the study team has access for electronic publishing. A variety of study documents are currently or will soon be available to the public via this server, including the:

- *Internet Costs and Cost Models for Public Libraries* report, including the figures
- Final report Executive Summary
- May 22 public library policy conference discussion paper, *Policy Initiatives and Strategies for Enhancing the Role of Public Libraries in the National Information Infrastructure (NII).*

Interested individuals can retrieve copies of these documents by pointing their Web browsers to: http://dataserver.syr.edu/~macbeth/Project/Faculty/McClure.html

As appropriate, the study team will make available additional study documents electronically.

Summary

The study team intends to pursue a variety of project result dissemination strategies in electronic and print formats. These combined strategies facilitate the dissemination of research findings to multiple audiences -- policy makers, stakeholder groups, researchers, and practitioners -- and serve to inform the policy debate concerning the role of public libraries in the emerging NII.

SUMMARY

The policy arena in which Federal initiatives are being developed related to the role of public libraries in the NII has been a rapidly changing one. Indeed, the changes that occurred between August, 1994, the start date of this project, and September, 1995, the end date of the project required the study team to modify some proposed project activities. These changes included giving more study attention to strategies that individual libraries and librarians might consider to enhance their roles in the NII; committing less level of effort to Federal policies that Congress might consider to enhance the role of public libraries in the NII; and developing strategies and costs, in some detail, to assist public libraries plan for Internet connectivity and services.

These modifications in the study resulted, in part, from the composition of the new Congress elected in November, 1995. The various data collection activities conducted by the study team indicated that the mood of the new Congress offered limited support for new program initiatives or providing additional resources to support libraries or networking initiatives. In addition, the "Contract with America" initiatives consumed much of the Congress' attention during the Spring of 1995.

Preliminary findings from the study indicated that if strategies were to be developed to enhance the role of public libraries in the NII, initiatives must come from the public library community itself. Thus, study team efforts concentrated on developing a manual to assist public libraries connect to and use the Internet. With some additional support from the National Commission on Libraries and Information Science, the study team produced the report, *Internet Costs and Cost Models for Public Libraries*, published by the Commission in June 1995. This report constitutes a major product from the overall study.

Despite the changing context for Federal policy initiatives related to the role of public libraries in the NII, there are a number of policy initiatives which can be promoted and developed (see Figure 2). Overall, many of these initiatives that have the greatest potential for success are those that can be implemented at the state and local level of government. But success will require active participation and involvement by the public library community.

To some degree Federal policymakers and others in society are not convinced that public libraries should serve as the key link to the Internet and the evolving NII. Their assessment comes less from some dislike for the public library as to lack of familiarity with public libraries, how libraries can assist to provide public access to the networked environment, and specific benefits that would result to society if public libraries did take on some of the roles that are identified earlier in this report. Thus, public librarians will need to continue to educate both policymakers and the

general public as to their importance and role in the evolving NII. These benefits must be made explicit and described in very tangible terms.

Increasingly, the public library community is embracing the Internet and the evolving NII. Findings from this study identified numerous examples of cutting edge involvement by the public and state library community in providing networked information resources and services to the public (see findings reported in the *Compendium*). But to continue these efforts, librarians will have to be very innovative in obtaining, redeploying, and allocating resources to support networking initiatives. While lobbying efforts for Federal policy initiatives that enhance the role of libraries in the NII should and must continue, increasingly, librarians will need to develop local and state strategies.

A very real fear that was voiced by a number of librarians and policymakers during the study was the possibility of reduced public access to networked information and services due to current policy initiatives and the telecommunications reform proposals. The current efforts of the Federal government to "reinvent itself" as part of the National Performance Review and other initiatives relies on innovative uses of information technology and placing increased amounts of information on the Internet. If the public, however, is unable -- for a host of reasons -- to access this information, "reinventing government" will only contribute to an apparent widening gulf between the network literate and those unable to have access to or use the network.

As this report is written, the final verdict on Federal telecommunications reform, reauthorization of a range of library programs, and funding for NTIA TIIAP (among others) is unclear. What does remain clear, however, is the commitment and dedication of many of the librarians who participated in this study to continue developing programs and initiatives to enhance the role of public libraries, to provide the public with universal service to the Internet and evolving NII, and to experiment with new strategies and technologies for improved networked information service to their communities.

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